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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,003	04/14/2004	Donald R. Krause	NG-32020(1)	5953
22202	7590	05/19/2006		
WHYTE HIRSCHBOECK DUDEK S C 555 EAST WELLS STREET SUITE 1900 MILWAUKEE, WI 53202				
			EXAMINER PADGETT, MARIANNE L	
			ART UNIT 1762	PAPER NUMBER

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/824,003	KRAUSE ET AL.	
	Examiner	Art Unit	
	Marianne L. Padgett	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-87 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 16, 18, 21, 22, 43, 51, 58, 65 and 71-87 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-15, 17, 19, 20, 23-42, 44-50, 52-57, 59-64 and 66-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. It is noted, that in an apparent attempt to clarify the meaning of "interlaced image" applicants have reprinted on page 15 of their 3/15/2006 response the same disclosure from page 2 of the specification which the examiner had previously stated left her without a clear concept of what the scope of this term was with respect to the claims, hence lacking any better definition, all possible meanings of this disclosure as discussed on page 2 in section 2 of the 10/18/2005 action will be considered applicable to the claims, i.e. essentially any sort of composite image. It is noted that preferences and examples, while providing options that are included by a term, do not necessitate the scope or the extent of limitations covered by a term. For instance, preference for photographic quality, does not exclude use of component images that are not photographic in nature, nor does it exclude using component images that are each a different color or shape, where when each segment of these components are arranged/printed on the substrate in the selected area, thus mapped, they form the final image with all the components intertwined/interlaced. This is consistent with the twice-cited page 2 paragraph, and sounds like an ordinary color printing technique to this examiner, whose area of examination includes radiation curing, not specialized printing techniques, if that is what this term is intended to represent. Applicant has noted 4 patents that teach examples of interlaced images (not necessary scope), but not attempted to point out any definition(s) therein, which might limit the scope more narrowly than the options pointed out in section 2 of the previous action. The examiner is required to interpret the terms of the claims in their broadest possible reasonable meaning, so lacking a definition more narrow than that already discussed above, and as applicants have effectively declined to supply one, the possible interpretations as previously set out in section 2 of the action mailed 10/18/2005 will be considered to define the broad scope of this term, i.e. will be considered broad not indefinite, and consequently rejection of it will be withdrawn.

2. The disclosure is objected to because of the following informalities: information in the specification concerning serial numbers needs to be up-dated, particularly see SN 10/340,075 on page 20, which is abandoned, but has both a published application and continuing applications related to it.

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The attempt to incorporate subject matter into this application by reference to USPN 6,424,467 B1 on page 2 of the specification is ineffective because it is improper to incorporate a reference that incorporates other references, as this patent does in col. 1, lines 30-31, 44-46 & 60-62, and col. 6, lines 48-64. Note, as applicant has not stated that no critical material is incorporated in this attempt, it remains improper.

On page 13, the last sentence of the second full paragraph ends in the word "and".

Appropriate correction is required.

3. Claims 1-5, 9-15, 17, 19-20, 23-42, 44-50, 52-57, 59-64 & 66-70 are objected to because of the following informalities: a number of antecedent basis problems need to be considered. For instance, in claim 1, in both lines 7 & 9-10 the limitation "a coating layer that substantially conforms to the interlaced image portion" (emphasis added) is introduced, but as the second limitation does not use an article showing antecedent basis, it may or may not refer to the first limitation, although from context the examiner expects that it is supposed, thus clarification of the claim language via amendment is recommended. Note analogous antecedence problem in claim 66.

Note a similar problem in claim 44, on lines 7 & 14, but in this case the antecedences problem is probably worse, since the line 14 usage of the like limitation is probably intended to refer to "a second coating...", not "a coating layer..." from line 7. Note analogous antecedence problems in claim 52 & 59, with the latter only sometimes using the differentiating limitation of "at least one additional".

In the independent claims, the examiner notes that applicants start out using limitations of "... interlaced image portion", and later in the claims drop the term "portion", where the examiner notes that while the image portions may be considered to contain the image, the limitations that only refer to the image do not necessarily contain all parts of the image portion. This is not necessarily a problem, although applicants may wish to consider whether it is consistent with their intent, however in some cases

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after dropping the term "portion" applicants inserted again, such as in claim 59, lines 11 & 12. Careful proofreading of these terms for consistency & intent is desirable.

It is noted, that the limitation of "... a pitch of at least 150 lenticules per inch" in original claim 39 does not appear to be found in the body of the original specification, as the discussion thereof on page 13 were values therefore were found/cited by applicant, there is no such range. Assuming applicants intend to continue claiming this limitation, the body of the specification needs to be amended to include it.

Appropriate correction is required.

4. Claims 39 & 42 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The examiner has reviewed applicant citation at page 13, lines 12-13 cited for "exemplary interpretation of the term 'pitch'", and the examiner is unsure from this exactly what applicant is suggesting the definition of pitch is intended to be. Are they truly trying to say that pitch means --number of things per unit distance-- or does "pitch" have some more significant meaning where the exemplary units of lines or lenticules per inch is one useful way of describing? The examiner needs to know what this term means in order to determine if there are any other useful ways of evaluating it or looking for like meanings, besides this particular unit of measurement that does not appear to have any relationship to the meanings of "pitch" that the examiner is familiar with.

Claim 42 remains ambiguous as rejected in section 2 of the 10/18/2005 rejection, as the claim has not been clarified to indicate whether the "charged area" is referring to an electrical charge or to a charge of coating material. The fact that on the pages 17-18 cited by applicant "charge" may refer to electrostatic charge, does not necessitate that it refers to any such thing in the claims, hence does not remove the ambiguity therein.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5, 9-15, 17, 19-20, 22-38, 39-42, 44-50, 52-57, 59-64 & 66-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quadracci et al (5,457,515), in view of Christie et al (5,128,385), optionally further considering Sekiguchi et al (5,695,346) for a more specific meaning of "interlaced", as discussed in section 6 of the 10/18/2005 action, and further in view of Sandor et al (5,330,799), as discussed in section 7 of the 10/18/2005 mailing.

To reiterate, Quadracci et al (5,457,515) teach several embodiments, where those of fig.8-9 described on col.11, lines 43-col.13, line 24 are of interest. A "precursor image web 34", where the web may be paper & is inclusive of a back side & a 3-D printed side, with image elements 26 printed via conventional printing techniques, that will be aligned, i.e. conformed to the applied lenticular lens coating (col.5, lines 15-57; col.6, lines 48-55+; col.7, lines 10-40). As illustrated in fig. 8-9 the printed web may be coated with a curable flowable resin source, which is spot or selectively applied, possibility by an anilox plate cylinder system, direct gravure, flexographic & various combinations; and cut relief patterned with desired lenticular pattern either with application on the web or after deposit, where thereafter it is

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cured, possibly by UV, although other curing techniques, such as chemical, drying, IR or ultrasonic are mentioned as usable, or the examiner notes that IR typically is used for thermal effects. Col.13, lines 50-56, note that different types of curable resins may be used in Quadracci et al (515)'s process. Quadracci et al (515) also teach the possibility of the use of multiple layers (fig.10, col.12, lines 25-39, 3 layers) to build up the spot lenticulation, as well as the option of using the lenticular images with other printing without lenticular coating thereon (col.13, lines 12-22). It is taught to make the lenticular web to the correct "pitch and thickness to provide the viewer with the illusion of 3-D" and exemplary lenticules/inch are given as 135 or 200, or at least 100, or at least 300 lines/in., with discussion on the effects of curvature of the lenticules, cross-sectional dimensions & focal length (col.8, lines 7-35+; col.10, lines 24-41; col.13, lines 26-49), hence while there was no "gauge thickness" values found taught, it would have been obvious to one of ordinary skill in the art given these teachings to determine via routine experimentation useful values of parameters related to shape and number of lenticules to provide the desired effects, which may be expected to be within claimed range values given the overlapping values of lenticules/inch, which applicants call pitch & its association in Quadracci et al (515)'s teachings with pitch thickness & visual effects.

Quadracci et al (515) differs by not requiring any curing before the shaping or embossing of the lenticular pattern in the resin, however Christie et al (385) teach that an initial curing &/or drying step to extend the polymeric chains, exemplified by moisture curing, with or without heat, followed by embossing, then actinic (UV) to complete the cure, enable formation of sharper deeper embossing (col.1, lines 20-40 & 51-65; col.3, lines 36-60; & col.4, lines 7-68+. esp. lines 15-19 noting use of steam or heat & example 2), hence it would have been obvious to one of ordinary skill in the art to provide some form of initial partial cure appropriate to the applied resin before the lenticular shaping in order to effect sharper lens formation, thus improving resultant product image quality as suggested by Christie et al (385)'s teachings. It is further noted that Christie et al (385)'s moisture curing may include use of heat, so it's

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optionally inclusive of a thermal curing means in the broadest sense of this limitation, although it does not specifically state that it is heat setting, however it would've been suggestive to one of ordinary skill in the art that since it is taught that it is frequently desirable for the moisture curing to be done using steam or heat, that the polymers such as polyurethane employed would have been expected to be at least in part desirably thermosetting due to the suggested use of heat, especially as it is taught in the background that totally cross-linking prior to embossing is conventional (col. 1, lines 62-65).

Quadracci et al (515) also doesn't detail the conventional printing techniques employed for the image printing, however other coating layers in the overall process do suggest useful printing techniques that are conventional ones, hence may be considered obvious to one of ordinary skill in the art for the image printing as suggested by Quadracci et al (515)'s teaching to use conventional printing techniques.

Sekiguchi et al (5,695,346) is cumulative to Quadracci et al (515), in view of Christie et al (385), for showing the types of images, such as composites of several images variously described as superimposed or interleaved or interlace or the like, which are analogously employed with lenticular lens coatings to produce not just the illusion of 3-D, but also of motion (abstract; fig.220-223; col.2, line 47-col.3, line10; col. 4, lines 1-7; col.49, line 32-col.50, line 13; & claims 8-20), hence it would have been obvious to one of ordinary skill in the art that this particular type of printed image as described in Sekiguchi et al (346) would have been equivalently treatable by the above discussed technique, as the materials involved are independent of the specific printed picture & optimization for the specific effect of the lenticular covering on the images would have been expected to require equivalent routine experimentation to determine useful parameters for desired effects.

While Quadracci et al (515), in view of Christie et al (385) teach other curing techniques, different types of curable resins may be used & use of multiple layers, they do not specify an initial cure being UV or detail the curing sequence when multiple layers are employed for the lenticular coating, however Sandor et al (799) who has analogous teachings to Quadracci et al (515) with respect to forming

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a UV curable lenticular coating over similar printed images, discloses multilayer deposition sequences that may be (UV) cured between individual coating applications & discloses the use of polymer layers for the lenticular coating that may be cured in 2 stages, where use of suitable thermosetting resins have been reactive polymers capable of being UV polymerized & reactive monomers which serve as a pollutant and facilitate control over viscosity with application of heating (or chilling) to control the viscosity of the polymer. While the stages differ by curing with application of the shaping means, then thereafter completing the cure, the effect is analogous as desired by Christie et al. in that the first use of UV lamp curing effectively prevents loss of embossed resolution. The teaching of thermosetting resin in combination with thermal viscosity control during radiation curing is suggestive of thermal curing reactions occurring along with the radiation curing. Hence, it would have been obvious to one of ordinary skill in the art given Quadracci et al (515)'s teaching of the use of other resins & curing means to employ resins as used in Sandor et al (799), which may be cured in 2 UV curing steps or stages (optionally with heat) to effect the taught curing before & after embossing as suggested by Christie et al (385) to provide the advantages of sharper embossed images in the relevant techniques of Quadracci et al (515). In Sandor et al (799), see the abstract; figures, esp. 2-3, 5, 8-9; col.1, lines 5-25; col.3, lines 21-61; col.4, lines 19-41; col. 5, line 33-col.6, line 18; col.8, lines 11-17 & 35-42; col.9, lines 19-38 & 64-col.10, lines 36 & 59-68; col.11, line 56-col.12, lines 26 & 56-68; and col.13, line 14-col.14, line 45.

7. Applicant's arguments filed 3/15/2006 impartially discussed above have been fully considered but they are not persuasive.

Given that Sandor et al. was applied for its two-stage curing, where the first stage is UV, applicant's arguments that completely ignore the reason for which Sandor et al. was applied field to be convincing.

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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLP/dictation software

5/16-17/2006


MARIANNE PADGETT
PRIMARY EXAMINER